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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,316	03/16/2001	Ola Olsvik	2001-0269A	7963

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EXAMINER

LANGEL, WAYNE A

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 05/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

787316

Applicant(s)

Olsvik et al

Examiner

Langel

Group Art Unit

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— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 3-31-03

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1 and 4-20 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1 and 4-20 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____

☐ Copies of the certified copies of the priority documents have been received

in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

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The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith et al., for the reasons given in the last Office action.

Claims 17-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith et al., for the reasons given in the last Office action.

Applicant's argument, that autothermal reforming is not described as one option for syngas generation in the process of Smith et al., and that partial oxidation uses an excess of oxygen

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and no catalyst bed, is not convincing, since Smith et al. disclose in the Drawing and again at column 3, lines 48-50 that hydrocarbons in line 1 and steam and oxygen in line 2 are introduced to hydrogen generation zone 4. Autothermal reforming would take place in the process of Smith et al. to no less extent than it would in the process recited in applicant's claims when both steam and oxygen are introduced to hydrogen generation zone 4, along with the hydrocarbon. Applicant's claims do not require the presence of a catalyst in the reforming reactor. In any event, Smith et al. teach at column 3, lines 51-54 that the hydrogen generation may be accomplished by steam-light hydrocarbon reforming or by partial oxidation "or by any other method resulting in production of hydrogen, carbon dioxide and carbon monoxide". It would be prima facie obvious to employ the conventional process of autothermal reforming to produce the stream of hydrogen, carbon dioxide and carbon monoxide in the process of Smith et al., since Smith et al. suggest that "any method" may be used which results in production of hydrogen, carbon dioxide and carbon monoxide. Applicant's argument, that Smith et al. disclose the production of high purity hydrogen and the use of low-temperature absorption and adsorption processes, is not convincing, since applicant's claims do not exclude the production of high purity hydrogen or the use of low-temperature absorption and adsorption processes.

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Claims 1 and 4-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Clawson et al. '425 in view of either Krishnamurthy et al. or Smith et al., for the reasons given in the last Office action. Applicant's argument, that Clawson et al. '425 discloses a special design (method) of a reactor for reforming of hydrocarbons using air/oxygen, and that the focus is on heavier fuels than natural gas and use in cars with fuel cells, thereby requiring compact design and heat integration, is not convincing. Clawson et al. '425 teaches at column 2, lines 16 and 17 that a mixture of oxygen gas, fuel vapor and steam are directed into the first vessel. Such step of Clawson et al. is not distinguishable from the step of natural gas and water being fed to a reforming reactor and converted to synthesis gas under supply of an oxygen-rich gas to the reactor, as recited in applicant's claims. Although Clawson et al. '425 teaches that heavy fuels may be employed as the hydrocarbon, Clawson et al. '425 also teaches at column 11, lines 14 and 15 that gaseous hydrocarbons such as methane can also be used. Applicant's arguments with respect to Krishnamurthy et al. and Smith et al. are not convincing, since Krishnamurthy et al. and Smith et al. are relied upon merely to show the obviousness of separating hydrogen from carbon dioxide in a method wherein hydrogen and carbon dioxide are produced in a hydrogen generation method employing hydrocarbons as a raw material. Regarding claims

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17-20, the uses of the hydrogen recited in these claims is conventional in and of themselves. It would be prima facie obvious to employ the hydrogen produced according to the process of Clawson et al. '425, as modified by either Smith et al. or Krishnamurthy et al., for such conventional uses.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner

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can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for this Group is (703) 305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

April 29, 2003

Wayne A. Langel
WAYNE A. LANGEL
PRIMARY EXAMINER